

BIOTERRORISM:
E. COLI

SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL

TACTICS AGAINST TERRORISM: **E. COLI**

South Carolina Department of Health and Environmental Control
Office of Public Health Preparedness



What is bioterrorism?

Bioterrorism is the intentional use of bacteria, viruses, or natural toxins (poisons) as a weapon to kill, injure or produce disease in humans, animals or plants. Terrorists may use such an attack to create fear, disrupt the economy, or to get a response from the government.

What is E. coli?

E. coli is a family of naturally occurring bacteria. Some of them can make you very sick and can be deadly. Most E. coli infections come from eating undercooked, contaminated ground beef.

Healthy cows can carry E. coli bacteria. When the cattle are processed for food, they can pass the bacteria to people and other animals. Person-to-person contact in families and child care centers is another possible way to get sick from certain types of E. coli. Infection can also occur after drinking raw milk and after swimming in or drinking water tainted by raw sewage.

Types of E. coli

There are hundreds of types of E. coli. Most types of E. coli will not hurt people. They live in the intestines of healthy people and animals. One type of E. coli (E. coli O157:H7) produces a toxin that can cause serious illness or death.

How people get E. coli O157:H7

It is believed that it only takes a small amount of E. coli O157:H7 to make you sick. The disease-causing bacteria can be passed from person to person. You can get it by:

- Eating ground beef tainted with E. coli O157:H7 that has not been cooked long enough. Most people get the illness this way. Contaminated meat can look and smell fine.
- Drinking water, unpasteurized milk or juice that contains E. coli O157:H7 bacteria.
- Eating foods that have been in contact with infected raw beef or its juices. These foods could include vegetables and fruits, and they must be thoroughly cooked to destroy the harmful bacteria.
- Swimming in water that has human or animal waste in it.
- Coming in contact with children or adults in child care centers in which someone has the illness.
- Coming in contact with disease-carrying animals in petting zoos. The bacteria can be killed by thoroughly washing hands with soap and water.

An estimated 73,000 cases of E. coli infection and 61 deaths occur in the United States each year.

How E. coli can be used for terrorism

Terrorists could use E. coli 0157:H7 bacteria as a weapon to strike many people at one time. Among the methods that could be used are:

- Adding bacteria to a water source or to food
- Infecting cattle that people will eat.

Symptoms of E. coli

Symptoms of the illness typically appear three to eight days after eating contaminated foods. Symptoms include:

- Diarrhea (might be bloody)
- Stomach cramps
- Little or no fever

You can have E. coli 0157:H7 infection but not have symptoms. Still, you can pass the bacteria to others and make them sick. People with this illness usually get better in five to 10 days. In some cases, E. coli 0157:H7 infection leads to kidney failure, strokes, seizures and brain damage.

Treating E. coli

There is no medicine to prevent E. coli. People with mild E. coli 0157:H7 infections usually get better without medicine in five to 10 days. A doctor might prescribe medicine to treat symptoms of E. coli. Do not try to treat yourself with medicine bought at the store.

E. coli 0157:H7 can cause your kidneys to stop working. This condition would cause you to die. If your doctor thinks you are having problems with your kidneys, he or she will send you to the hospital. Your blood will be replaced with healthy blood and your kidney will be treated. If your kidneys fail because of E. coli illness, you could have life-long problems like high blood pressure, seizures, paralysis and blindness.

How to protect yourself and others

- Cook ground beef and hamburgers until their juices are clear, not bloody. Ground beef can turn brown without killing the bacteria. To be sure the bacteria are dead, put a meat thermometer in the thickest part of the meat. Meat is safe to eat when it is cooked to a temperature of at least 155°F. Wash the meat thermometer after you use it.
- Store beef products on lower shelves of the refrigerator to prevent them from dripping on other foods.
- Wash your hands, counter tops, and spoons, forks and knives with hot, soapy water after they touch raw beef.
- Never put steaks, roasts, hamburgers or ground beef on the same plate that held raw meat until after the plate has been thoroughly washed.
- If you are served a hamburger that is still pink or bloody in the middle, ask that it be cooked longer. Ask for a new bun and a clean plate, too.
- Don't drink milk or juice that is not pasteurized. Pasteurized milk or juice has been heated to a high temperature to kill bacteria.
- Wash fruits and vegetables, especially if you are going to eat them raw.
- Children younger than 5 years old, people who get sick easily and elderly people should not eat alfalfa or bean sprouts.
- Only drink water that has been treated to make it safe to drink.
- Avoid swallowing water when you go swimming.
- Make sure people with diarrhea, especially children, wash their hands with soap after using the restroom.
- Anyone with diarrhea should avoid swimming in public pools or lakes. They should not share baths with another person or make food for other people.
- Wash your hands after changing a baby's dirty diaper.
- Wash your hands after touching animals in petting zoos. Parents should closely supervise their children's hand washing to ensure bacteria are killed. Be sure to use antibacterial soap, if possible.

What's being done to protect you

- If a terrorist attack involving E. coli 0157:H7 bacteria occurs, the South Carolina Department of Health and Environmental Control (DHEC) and the Centers for Disease Control and Prevention (CDC) will take steps to help prevent other people from getting sick. You will be given important health information through your local news media.
- DHEC inspects restaurants to make sure food is prepared in a safe, clean way. DHEC will inform the public if people get sick from E. coli 0157:H7 caused by food from a restaurant or food that has been sold in stores.
- DHEC requires restaurants in S.C. to cook ground beef products, such as hamburgers, to an internal temperature of 155°F or higher.
- DHEC provides technical assistance to public drinking water systems concerning emergency response issues and bioterrorism.
- DHEC helps public water systems assess their risks and prepare for emergencies.
- The U.S. Department of Agriculture (USDA) makes sure cattle farms and meat-processing plants are safe and clean. The USDA also inspects food brought to the U.S. from other countries.
- DHEC shares information about E. coli 0157:H7 cases with the CDC and other states so that illnesses related to exposures or nationally distributed foods can be identified quickly.

If there is a terrorist attack using E. coli 0157:H7, local and state law enforcement and health agencies will provide you with additional instructions to protect yourself.

Numbers to know

Emergencies:	9-1-1
Palmetto Poison Center:	(800) 222-1222
DHEC (during normal business hours):	(803) 898-3432
CDC:	(888) 232-4636

All cases of foodborne bioterrorism should be reported to DHEC. Phone numbers and other contact information for the agency's Regional Food Defense Coordinators can be found on the Internet at http://www.scdhec.gov/health/envhlth/food_protection/

For more information

S.C. DHEC

<http://www.scdhec.gov>

DHEC Office of Public Health Preparedness

<http://www.scdhec.gov/administration/ophp/tactics.htm>

DHEC brochure on E. coli

http://www.scdhec.gov/health/envhlth/food_protection/docs/ML-018004.pdf

Centers for Disease Control and Prevention

<http://www.bt.cdc.gov>

U.S.D.A.'s Food Safety and Inspection Service

<http://www.fsis.usda.gov>

The phone numbers for reporting cases or possible cases of bioterrorism to your local health department and the DHEC Division of Acute Disease Epidemiology are available at: http://www.scdhec.gov/health/disease/docs/reportable_conditions.pdf

This publication provides health information for your general knowledge. Talk to your doctor about your concerns about any medical condition. DHEC does not recommend you diagnose or treat yourself for a serious illness.

Notes:







South Carolina Department of Health
and Environmental Control

SOUTH CAROLINA

**Tactics
Against
Terrorism**

Be Safe. Be Smart.